

REMARKS

Applicants have cancelled claims 2 and 13 and have amended claims 1, 3 8, 9, 12, 14, 19, and 20 as set forth above. Applicants note with appreciation the Office's indication that claims 37, 41-44, 48-50 are allowable and claims 4-11 and 15-22 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In view of the above amendments and the following remarks, reconsideration of the outstanding office action is respectfully requested.

The Office has rejected claims 1-3 and 12-14 under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,292,212 to Zigadlo et al. (Zigadlo). The Office asserts Zigadlo discloses: an image acquisition system (Figure 1, Item 10 excluding Item 22) having an image sensor (Figure 1, Item 12) which has a set of color filters thereon (Figure 1, Item 14), and two or more color channels having a different spectral sensitivity (Figure 2, G+IR, R+IR, IR) and a set of color filters (Figure 1, Item 22) each of the color filters having a different spectral transmittance (e.g. Figure 1, Item 24 filters IR, Figure 1, Item 26 filters yellow), the filters positioned between the scene (Figure 1, Item 20) and the image acquisition system (Figure 1, Item 10 excluding Item 22). The Office asserts Zigadlo further discloses the camera can be used with filter 26 in place to function as an infrared camera and can be used with filter 24 in place to function as a true color camera (c. 3, I. 64 - c. 4, I. 2). The Office asserts it would have been obvious to one of ordinary skill in the art at the time the invention was made to capture a series of images with a first image filtered by filter 26 and a second image filtered by filter 24 to capture an infrared description of the scene and a true color description of the scene. However, the Office Acknowledges Zigadlo does not disclose that filters 24 and 26 are non-interference filters, but asserts the use of absorption type non-interference filters are notoriously well known in the art as commonly available color filters which can be obtained at most camera stores.

Zigadlo does not disclose or suggest, "generating a multi-spectral scene description from the acquired first series of filtered images" as recited in claim 1 or "a spectral image processing system which generates a multi-spectral scene description from the acquired first series of filtered images" as recited in claim 12. Contrary to the Office's assertions col. 4, line 64 to col. 5, line 13 in Zigadlo as set forth below does not teach or suggest generating a multi-spectral scene description from the acquired first series of filtered images.

Additional color matrixing adjustments may be made by the signal processing electronics 28 to correct for color balance and unwanted overlap in the spectral bands that could not be filtered optically. The signal processing electronics also manipulates the image signal so the processed green information that represents the original scene (G') is displayed as blue (B''), the red information that represents the original scene (R') is displayed as green (G''), and the infrared information that represents the original scene (IR') is displayed as red (R'') on CRT 32. Although this is a preferred method of false color display, any other choice of false color display could be used within the spirit of the present invention. Furthermore, if it is not desired to convert the camera from false color infrared to true color, the filter mechanism 22 may include only the yellow filter element 26, and the signal processing electronics 28 does not need to receive operating mode signal 30.

As illustrated above, this passage in Zigadlo cited by the Office only discloses that the signal processing electronics 28 illustrated in FIG. 3 can: (1) make adjustments to correct for color balance and unwanted overlap in the spectral bands in an image; and (2) manipulate the image signal for a false color display of an image. These adjustments and manipulations in Zigadlo are only with respect to a single image, not an acquired first series of images. This is consistent with the rest of the disclosure in Zigadlo. For example, the Office's attention is respectfully directed to col. 3, lines 64 to col. 4, line 2 in Zigadlo which states, "When the yellow filter 26 is positioned in front of the lens 18, the camera 10 functions as an infrared camera according to the present invention. When the infrared filter 24 is positioned in front of lens 18 and the yellow filter 26 is removed, the camera 10 functions as a normal electronic true color camera." Accordingly, Zigadlo only discloses operating the camera to capture a single image as either an infrared camera or a normal electronic true camera and makes no discussion or suggestion on any processing relating to both images, let alone processing of a series of images to generates a multi-spectral scene description. Further, even if the two images generated by the camera in Zigadlo were used and processed as suggested by the Office would be obvious to one of ordinary skill in the art, they would be incapable of estimating spectra over the spectral region and thus would not improve color accuracy.

In view of the foregoing amendments and remarks, the Office is respectfully requested to reconsider and withdraw the rejection of claim 1 and 12. Since claim 3 depends from and contains the limitations of claim 1 and claim 14 depends from and contains the limitations of claim 12, they are distinguishable over the cited references and are patentable in the same manner as claims 1 and 12.

The Office has objected to claims 4-11 and 15-22 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Accordingly, Applicants have rewritten allowable dependent claims 8, 9, 19, and 20 in independent form including all of the limitations of the base claim and any intervening claims. Additionally with respect to the remaining allowable dependent claims, in view of the foregoing amendments and remarks with respect to independent claims from which these claims depend, no further amendment of these claims is believed to be necessary and the Office is respectfully requested to reconsider and withdraw this objection.

In view of all of the foregoing, Applicants submit that this case is in condition for allowance and such allowance is earnestly solicited.

Respectfully submitted,

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